IDA MEMORANDUM REPORT M-494

AD-A200 449

RESPONSES OF THE 1/10 CAVALRY TO SIMNET

John D. Fletcher

DTIC
SELECTED
OCT 1 2 1988

July 1988

Prepared for
Defense Advanced Research Projects Agency

INSTITUTE FOR DEFENSE ANALYSES
1801 N. Beauregard Street, Alexandria, Virginia 22311

DEFINITIONS

IDA publishes the following documents to report the results of its work.

Reports

Reports are the most authoritative and most carefully considered products IDA publishes. They normally embody results of major projects which (a) have a direct bearing on decisions affecting major programs, or (b) address issues of significant concern to the Executive Branch, the Congress and/or the public, or (c) address issues that have significant economic implications. IDA Reports are reviewed by outside panels of experts to ensure their high quality and relevance to the problems studied, and they are released by the President of IDA.

Papers

Papers normally address relatively restricted technical or policy issues. They communicate the results of special analyses, interim reports or phases of a task, ad hoc or quick reaction work. Papers are reviewed to ensure that they meet standards similar to those expected of refereed papers in professional journals.

Memorandum Reports

IDA Memorandum Reports are used for the convenience of the sponsors or the analysts to record substantive work done in quick reaction studies and major interactive technical support activities; to make available preliminary and tentative results of analyses or of working group and panel activities; to forward information that is essentially unanalyzed and unevaluated; or to make a record of conferences, meetings, or briefings, or of data developed in the course of an investigation. Review of Memorandum Reports is suited to their content and intended use.

The results of IDA work are also conveyed by briefings and informal memoranda to sponsors and others designated by the sponsors, when appropriate.

_4D A1 2 0 0 1 9_

REPORT DOCUMENTATION PAGE

1a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED		1b. RESTRICTIVE MARKINGS			
2a. SECURITY CLASSIFICATION AUTHORITY N/A		3. DISTRIBUTION/AVAILABILITY OF REPORT Approved for public release; distribution unlimited.			
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE N/A					
4. PERFORMING ORGANIZATION REPORT NUMBER(S) IDA Memorandum Report M-494		5. MONITORING ORGANIZATION REPORT NUMBER(S)			
6a. NAME OF PERFORMING ORGANIZATION Institute for Defense Analyses	6b. OFFICE SYMBOL (If applicable) STD	7a. NAME OF MONITORING ORGANIZATION			
6c. ADDRESS (City, State, and Zip Code) 1801 N. Beauregard Street Alexandria, VA 22311		7b. ADDRESS (CITY, STATE, AND ZIP CODE)			
8a. NAME OF FUNDING/SPONSORING ORGANIZATION DARPA/Defense Sciences Office	8b. OFFICE SYMBOL (If applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER MDA 903 84 C 0031			
8c. ADDRESS (City, State, and Zip Code) 1400 Wilson Boulevard Arlington, VA 22209-2308		10. SOURCE OF FUNDING NUMBERS			
		PROGRAM ELEMENT	PROJECT NO.	TASK NO. A-83	WORK UNIT ACCESSION NO.

11. TITLE (Include Security Classification)
Responses of the 1/10 Cavalry to Simnet

12. PERSONAL AUTHOR(S).
John D. Fletcher

13. TYPE OF REPORT Final	13b. TIME COVERED FROM 11/87 TO 12/87	14. DATE OF REPORT (Year, Month, Day) July 1988	15. PAGE COUNT 85

16. SUPPLEMENTARY NOTATION

17.	COSATI CODES		18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)
FIELD	GROUP	SUB-GROUP	SIMNET, simulation network, training, military training, simulator training, training analyses, training effectiveness survey

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

This report documents the questionnaire responses of members of the 1/10 Cavalry Battalion after they had trained for an average of 52 hours in SIMNET. The responses of commanders, crewmembers, and scouts are reported separately and compared. Additionally, the responses of officer and enlisted commanders are reported separately and compared. Impressions of the soldiers, their recommendations for design of SIMNET, and their recommendations for implementation of SIMNET training are presented and discussed.

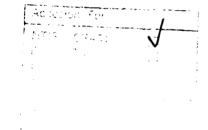| 20. DISTRIBUTION/AVAILABILITY OF ABSTRACT ☐ UNCLASSIFIED/UNLIMITED ☒ SAME AS RPT. ☐ DTIC USERS	21. ABSTRACT SECURITY CLASSIFICATION UNCLASSIFIED	
22a. NAME OF RESPONSIBLE INDIVIDUAL John D. Fletcher	22b. TELEPHONE (Include Area Code) (703) 578-2837	22c. OFFICE SYMBOL

IDA MEMORANDUM REPORT M-494

RESPONSES OF THE 1/10 CAVALRY TO SIMNET

John D. Fletcher

July 1988

A-1

IDA
INSTITUTE FOR DEFENSE ANALYSES

PREFACE

This report was prepared for the Defense Advanced Research Projects Agency under Project Assignment A-83--Large-Scale Gaming Training Analyses.

The objective of the IDA effort has been to assist in planning the analysis of the DARPA large-scale electronic gaming network for the purposes of training. This report documents the questionnaire responses of members of the 1/10 Cavalry Battalion after they had trained for an average of 52 hours in SIMNET (large-scale simulator networking). The SIMNET consists of combat vehicle simulators, communications networks, command posts, and data processing facilities. The material has not been subjected to formal IDA technical review.

ABSTRACT

This report documents the questionnaire responses of members of the 1/10 Cavalry Battalion after they had trained for an average of 52 hours in SIMNET. The responses of commanders, crewmembers, and scouts are reported separately and compared. Additionally, the responses of officer and enlisted commanders are reported separately and compared. Impressions of the soldiers, their recommendations for design of SIMNET, and their recommendations for implementation of SIMNET training are presented and discussed.

CONTENTS

LIST OF TABLES

SUMMARY

Over a three week period in late November and early December 1987, the 1/10 Cavalry Battalion trained in SIMNET. The 1/10 Cav was the first unit to accumulate 50+ hours experience with SIMNET engagement training, and the responses of its soldiers to SIMNET were of natural interest. It seemed appropriate to address the following five issues in questionnaires:

How well does SIMNET perform as a device?

How well does SIMNET perform as a simulator?

How well are different skills exercised in SIMNET?

What are appropriate training roles for SIMNET?

How well is SIMNET accepted by soldiers?

On 18-22 December 1987 the 1/10 Cav completed two questionnaires. The first was a "Ratings" Questionnaire that asked respondents to rate items on scales of 1-5 or 1-10. The second was a "Perceptions" Questionnaire that asked respondents to write open-ended responses describing their perceptions of SIMNET. This report summarizes responses of the 1/10 Cavalry to these two questionnaires.

General findings are the following:

1. We received thoughtful comprehensive responses from nearly all respondents.

2. Overall, the respondents' impressions of SIMNET were favorable.

3. Commanders rated SIMNET higher than did crewmembers.

4. Officers and enlisted commanders responded differently to many items.

5. The most favorable aspects of SIMNET training noted across all respondents concerned command and control, use of terrain, land navigation, movement, maneuver, and formations.

6. Recommended improvements to SIMNET included:

   a. Add vehicle identification.

   b. Add more terrain features.

c. Add the capability to engineer obstacles.

d. Improve the reliability of SIMNET communications.

e. Improve headsets.

f. Add night operations.

g. Add smoke and weather effects.

BACKGROUND

Over a three week period in late November and early December 1987, the 1/10 Cavalry Battalion trained in SIMNET. The 1/10 Cav was the first unit to accumulate 50+ hours experience with SIMNET engagement training, and the responses of its soldiers to SIMNET were of natural interest. It seemed appropriate to address the following five issues in questionnaires:

How well does SIMNET perform as a device?

How well does SIMNET perform as a simulator?

How well are different skills exercised in SIMNET?

What are appropriate training roles for SIMNET?

How well is SIMNET accepted by soldiers?

We did not expect final answers to these questions from survey data, but the perceptions of users are essential information in assessing any device. By their intensive use of SIMNET, the soldiers of the 1/10 Cav became our first significant experts on the users' views of SIMNET. Accordingly, we proceeded to capture their impressions as well as we could -- by asking them directly in questionnaires.

On 18-22 December 1987 the 1/10 Cav completed two questionnaires. The first was a "Ratings" Questionnaire that asked respondents to rate items on scales of 1-5 or 1-10. The second was a "Perceptions" Questionnaire that asked respondents to write open-ended responses describing their perceptions of SIMNET. This memo summarizes responses of the 1/10 Cavalry to these two questionnaires.

Ratings Questionnaire Responses

There were two versions of the Ratings Questionnaire, one intended for crewmembers (loaders, drivers, drivers) and one intended for commanders (tank commanders, platoon leaders, company commanders, battalion staff).

The crewmembers' questionnaire (Attachment 1) consisted of:

8 fill-in items concerning "demographic" data

(duty position, years of experience, hours in SIMNET, etc.)

28 items to be rated 1-5

2 items to be rated 1-2 (yes or no)

2 open-ended items

The commanders' questionnaire (Attachment 2) consisted of:

7 fill-in items concerning "demographic" data

35 items to be rated 1-5

18 items to be rated 1-10

2 items to be rated 1-2 (yes or no)

4 open-ended items

Twenty-five of the items rated 1-5 and the two items rated yes or no were the same on both versions of the questionnaire. In all cases, higher ratings indicated more favorable impressions of SIMNET. A typical item was the following:

How well did the communications in your SIMNET vehicle operate?

5	4	3	2	1
Very	Well	Satisfactorily	Poorly	Very
Well				Poorly

Nineteen commanders, 60 crewmembers, and 9 scouts completed these questionnaires. The 9 scouts completed the commanders' version of the questionnaire, but their responses are treated separately from the 19 commanders' responses. These three groups are described in Table 1.

Ratings Questionnaire -- Commanders' Responses

The items rated 1-5 on the commanders' questionnaire are considered first here. Responses to these 35 items were tallied and then ranked from 1 (highest rated/most favorable) to 35 (lowest rated/least favorable). The items and the ratings given them by the 19 commanders are listed in the order of their rankings in Table 2.

The overall average for responses by the commanders to these items was 3.63. Roughly, an item rated 3.5 or higher can be assumed to have received a 'good' or 'very good' rating. Twenty-six of the 35 items fell in this category.

4

Next the items rated 1-10 on the commanders' questionnaire are considered. The commanders were asked to indicate with a number from 1 (Very Poorly) to 10 (Very Well) how well each of 18 types of training could be conducted using SIMNET. The training types and the ratings given them by the 19 commanders are listed in the order of their ranking in Table 3.

The overall average for responses by the commanders to these items was 5.79.

The two items rated yes or no on the commanders' questionnaire indicated whether the respondents enjoyed their SIMNET experience and whether they would be willing to use it again. The commanders' responses to these two items averaged 1.83 (yes = 2, no =1).

The 9 scouts rated some items differently than did the 19 commanders. Questionnaire items for which the commanders' and scouts' rankings differed by 10 or more are shown in Table 4. In making this comparison, the items were ranked from 1 (highest rated/most favorable) to 35 (lowest rated/least favorable).

Finally, the commanders were asked four open-ended questions. Some commanders did not respond to these items at all, and others listed several elements. The numbers in Table 5 report how many times each element in the list was mentioned.

The group of commanders who completed the commanders' questionnaire consisted of both officers and NCOs. These responses were separated out and tallied separately.

Some descriptive statistics for these two groups are given in Table 6. There were 7 officers and 12 NCOs. The officers had accumulated about half as many years in the Army as had the NCOs, and they spent about a third less time in SIMNET than did the NCOs.

The overall average for responses by officers to the 35 questionnaire items rated 1-5 was 3.40. As usual, an item rated 3.5 or higher can be assumed to have received a 'good' or 'very good' rating. The officers rated 18 of the 35 items 3.5 or higher. These items can be identified as those ranked 1-18 under the "Officer Ranking" column in Table 7. The officers also rated 4 items as 2.5 or lower (items ranked 32-35 in Table 7). Roughly, 2.5 and below can be considered as a rating of 'poor' or 'very poor'.

The NCOs rated these 35 items slightly higher than did the officers. Ratings by the NCOs averaged 3.77. They rated 29 items as 3.5 or higher. These items are ranked 1-29 under the "NCO Ranking" column in Table 7. The NCOs rated no items as 2.5 or lower.

The items concerned with training types and rated 1-10 on the commanders' questionnaire are shown with their rankings in Table 8. The commanders were asked to indicate with a number from 1 (Very Poorly) to 10 (Very Well) how well each of 18 types of training could be conducted using SIMNET. These 18 items received an average rating of 5.57 from the officers and a slightly more favorable average rating of 5.92 from the NCOs.

Ratings Questionnaire -- Crewmembers' Responses

Items rated 1-5 on the crewmembers' questionnaire are considered next. Responses to these 28 items were tallied and then ranked from 1 (highest rated/most favorable) to 28 (lowest rated/least favorable). The items and the ratings given them by the 60 crewmembers are listed in the order of their rankings in Table 9.

The overall average for responses by the crewmembers to these items was 3.28. Roughly, an item rated 3.5 or higher can be assumed to have received a 'good' or 'very good' rating. Eight of the 28 items fell in this category.

As in the commanders' questionnaire, the two items rated yes or no on the crewmembers' questionnaire indicated whether the respondents enjoyed their SIMNET experience and whether they would be willing to use it again. The crewmembers' responses to these 2 two items averaged 1.74 (yes = 2, no =1).

There were 23 drivers and 22 gunners among the 60 crewmembers. The drivers and gunners rated some items differently. Questionnaire items for which the gunners' and drivers' rankings differed by 10 or more are shown in Table 10. In making this comparison, the items were ranked from 1 (highest rated/most favorable) to 28 (lowest rated/least favorable).

Finally, the crewmembers were asked two open-ended questions. Some crewmembers did not respond to these items at all, and others listed several elements. The numbers in Table 11 report how many times each element in the list was mentioned.

Perceptions Questionnaire Responses

The Perceptions Questionnaire (Attachment 3) consisted of 13 open-ended questions. No "demographic" data were requested on this questionnaire. Thirty-four individuals in command positions (tank commander and up) completed the questionnaires.

Tables 12-24 present results obtained from each of the 13 items in turn. The format used for each of these tables is roughly the same. A few commanders did not respond to some items. Most commanders gave lengthy and thoughtful responses. I coded these responses and listed them in the tables. The numbers report how many times each element in the list was mentioned. The lists of quotes are not comprehensive, but they are intended to be representative.

Table 12 reports responses to Perceptions Questionnaire Item 1. Responses for Yes, Adequate, and No were not requested in the questionnaire. The tallies for these categories represent my interpretation of the responses.

Table 13 reports responses to Item 2. As in Item 1, responses for Yes, Adequate, and No were not requested. The tallies for these categories represent my interpretation of the responses.

Table 14 reports responses to Item 3. Responses for Crew, Platoon, Company, and Battalion levels of leadership were explicitly requested in the questionnaire. I added 'All' and 'All But Crew'. However, the numbers report tallies obtained directly from the respondents.

Table 15 reports responses to Item 4. Responses for Yes and No were explicitly requested in the questionnaire. The numbers report tallies obtained directly from the respondents.

Table 16 reports responses to Item 5. Responses for Yes and No were explicitly requested in the questionnaire. The numbers report tallies obtained directly from the respondents. 'Maybe' was a write-in response from one of the commanders.

Table 17 reports responses to Item 6. Although the item asks for the 'most positive aspect', suggesting a single response, most respondents wrote in several, and the numbers do not sum to 31.

Table 18 reports responses to Item 7. Although the item asks for the 'most negative aspect', suggesting a single response, most respondents wrote in several, and the numbers do not sum to 33.

Table 19 reports responses to Item 8. Responses for Yes and No were explicitly requested in the questionnaire. The numbers report tallies obtained directly from the respondents. Responses for the exercises were also explicitly requested in the

questionnaire, and the numbers report tallies of actual responses. Percentages were not explicitly requested, but we obtained percentages from 6 respondents.

Table 20 reports responses to Item 9.

Table 21 reports responses to Item 10. Responses for Yes and No were not requested in the questionnaire. The tallies for these categories represent my interpretation of the responses.

Table 22 reports responses to Item 11.

Table 23 reports responses to Item 12. Responses to numbers of hours (2, 4, 6, and so on) were explicitly requested. The numbers report tallies obtained directly from the respondents.

Table 24 reports responses to Item 13.

DISCUSSION AND SUMMARY

I was impressed by the professionalism of the soldiers who filled out these questionnaires. Three or four questionnaires were 'gundecked' (all items were rated the same). Three or four other respondents had either nothing good or nothing bad to say about SIMNET. But that leaves 70+ respondents who gave us thoughtful, comprehensive responses. The four quotes (Table 25) selected from those made on the Ratings Questionnaire request for 'Other Comments' shows that we received a full range of responses. One commander gave us two pages of word-processed comments, which are included here as Attachment (4).

The respondents' impressions of SIMNET were favorable. In Table 2, the commanders rated 26 of the 35 items above 3.5, in the good to very good range, the average rating of all 35 items was 3.63, and only one item was rated below the 3.0 mid-scale value. In Table 9, the crewmembers rated 8 of the 28 items above 3.5, the average rating of all 28 items was 3.28, and only 4 items were rated below the 3.0 mid-scale value. On a two point scale, the commanders averaged 1.83 in liking/acceptability of SIMNET, and the crewmembers averaged 1.73. Thirty of 33 respondents to Perceptions Item 5 replied that they would use SIMNET to train if they had access to it (Table 16). Thirty-one of 33 respondents to Perceptions Item 10 replied that they thought their training on SIMNET was helpful (Table 21).

The responses show that commanders rated SIMNET higher than did crewmembers. The reasons for this may be captured by one of the respondents who wrote, "The bigger the picture, the more useful SIMNET is and the less likely that level of leadership gets to test itself and develop itself."

This point of view is supported by the commanders' ratings (shown in Table 3) of how well different types of training can be performed in SIMNET. Battalion-level, company-level, and combined arms training were rated highest. Tactical tables, initial entry for crewmembers, and basic NCO training were rated lowest -- although it is interesting

that only initial entry loader training received an average rating below the 5.0 midpoint of the 10-point scale used for this item.

It can be seen from Table 7 that the officer and NCO commanders responded differently to many items. The rankings for 16 of the 35 items differ by more than 10. Within this group of 16 items, officers rated the following 7 items more favorably than did the NCOs:

Cmdr Ranking	Officer Ranking	NCO Ranking	Item
11	5	16	Please rate SIMNET overall as a trainer.
14	9	19	How well did the controls (knobs, dials, switches, etc.) in your SIMNET vehicle operate?
15	6	23	How would you rate your experience in SIMNET?
17	3	29	Please rate SIMNET as a trainer for your duty position.
21	8	27	How well did the visual displays in your SIMNET vehicle operate?
27	10	34	How well did SIMNET exercise your communication skills?
28	18	30	How many of your actions and decisions in SIMNET were the same as they would be in the field?

Within the same group of 16 items, NCOs rated the following 9 items more favorably than did the officers:

Cmdr Ranking	Officer Ranking	NCO Ranking	Item
4	14	2	Overall, how well does SIMNET exercise combined arms skills?
9	23	3	How well did the sound and vibration effects in your SIMNET vehicle operate?
12	19	7	How well did SIMNET exercise your tactical skills?
13	20	9	How well does SIMNET exercise fire support skills?

10

16	29	8	How well does SIMNET exercise skills needed to work with platoons?
19	27	13	How well did SIMNET exercise your land navigation skills?
25	28	18	How well did SIMNET exercise your target acquisition skills?
29	33	15	How well did SIMNET exercise your skills in using terrain?
31	34	21	How well does SIMNET exercise mobility/countermobility skills?

Rankings by the officers and the NCOs differed by more than 10 ranking positions on 4 of these items . Within this group of 4 items, the officers rated the following 2 items more favorably than did the NCOs:

Cmdr Ranking	Officer Ranking	NCO Ranking	Item
4	2	15	Pre-Command Training
6	3	14	Armor Officer Advanced Training

The NCOs rated the following 2 items more favorably than did the officers:

Cmdr Ranking	Officer Ranking	NCO Ranking	Item
11	15	4	Initial Entry Gunner Training
14	17	1	Initial Entry Driver Training

The most favorable aspects of SIMNET noted by all respondents on both ratings questionnaires were command and control, use of terrain, land navigation, movement, maneuver, and formations. As an aside, I note that closed hatch operations received favorable comment more frequently than not.

Command and control was the most frequently mentioned item when the commanders were asked what single thing SIMNET does best to help them do their jobs (Table 5) and the second most frequent item when the crewmembers were asked the same question (Table 11). All 34 commanders replied 'Yes' to Perceptions Item 4 which asked if SIMNET can be used effectively as a command and control trainer (Table 15). Command and control was most frequently listed as the most positive aspect of SIMNET on Perceptions Item 6 (Table 17). Planning, operation orders, vertical and horizontal

11

integration, spot reporting, and communications were all aspects of command and control that respondents suggested that SIMNET improved.

Unrestricted movement throughout the terrain was favorably mentioned itself, and it may have accounted for the frequent favorable mention of movement, maneuver, drill formation, use of terrain, and land navigation training in SIMNET. The commanders listed movement and maneuver second most frequently (after command and control) as the single thing SIMNET did best to help them do their jobs (Table 5). Crewmembers listed map reading/navigation first and maneuver second most frequently in response to the same question (Table 11). On Perceptions Item 1 commanders listed tight formations and drills most frequently and unrestricted movement next most frequently as aspects of collective maneuver trained in SIMNET(Table 12). Movement to contact, maneuver, and formations/drills were three of the four most frequently mentioned types of tasks commanders would train using SIMNET (Table 16).

The availability of SIMNET as a relatively inexpensive way to meet training objectives that are now not met anywhere also received favorable notice. The characteristic that was second most frequently noted when commanders were asked to list the most positive aspect of SIMNET was that it is inexpensive (Table 17).

12

DISCUSSION AND SUMMARY -- SUGGESTED IMPROVEMENTS

Suggested SIMNET improvements are summarized and listed, roughly in order of expressed interest, in Table 26. I tried to include in this table suggestions that were specific (e.g., vehicle identification numbers) rather than vague (e.g., more realistic graphics) and either frequently mentioned (e.g., include smoke) or particularly interesting (e.g., allow vehicles to tow one another).

Some of these recommendations may be of both high interest and relatively low cost (e.g., large screen video or video projection for AARs). It might be a good idea to identify some of these for early action.

Vehicle identification capability ('bumper numbers') is a pervasive suggestion that appeared in many different contexts, not just in the context of road marches. It is probably the highest priority improvement for these respondents.

More/better terrain features may be the improvement next highest in priority. I do not think this suggestion necessarily reflects a desire for more resolution. Using current resolution to add more terrain features that can be used to better judge distance and vehicle speed may do a lot to satisfy this need.

Adding capabilities for engineering/obstacles/mines/countermobility would also be among the top five priority suggestions. Several responses suggested that SIMNET was much better for offensive than for defensive operations. These responses were generally reactions to the lack of countermobility measures in SIMNET.

The reliability of communications in SIMNET received considerable criticism. One respondent said, "Communications was the one major disappointment of SIMNET." If communications in SIMNET are less reliable than they are in the field, some effort to improve them may be in order.

Another high interest recommendation concerns headsets. Many respondents complained that the SIMNET headsets are uncomfortable, especially after 2-3 hours of

13

continuous use. Related to this recommendation were the complaints about noise in SIMNET. As the respondents reported, CVC helmets are more comfortable than SIMNET headsets, and they cancel out more noise. Recommendations concerning the headsets suggested making them more comfortable, giving them longer cords, and/or replacing them with the tankers' own CVCs. If nothing is done about the headsets, reducing the volume of the noise might be a suggestion worth considering separately.

Many respondents wanted night operations in SIMNET. For that matter, many of the recommendations for duration of continuous exercise in SIMNET were keyed to the lack of night operations.

Many respondents wanted smoke and weather effects. Smoke was mentioned about twice as often as weather.

Recommendations in the following group were all mentioned with about the same frequency by the respondents. They are all at about the same level of interest.

Many respondents recommended provision of a 1st Sgt vehicle and a fire support team (FIST) vehicle. The 1st Sergeant's vehicle was mentioned about twice as often as the FIST vehicle. Could a few simulators be set aside for 1st Sgt, FIST, or other special uses? This may be a low cost, high interest action.

Many respondents wanted more vision blocks for the tank commander's station.

Some respondents suggested that SIMNET teaches poor (probably too reckless) driving habits. Is it harder to throw a track in SIMNET than in the field? Some of our respondents thought so.

The main recommendation for improving after action reviews (AARs) was to provide large screen video replay. Perhaps the SIMNET facility should invest in a video projector. This may be another low cost, high interest action.

Many respondents recommended that artillery should have an effect on the terrain it strikes.

The Scouts thought the OpFor artillery was too accurate. Some Bradleys were destroyed with a single shot. The Scouts did not like that.

Many respondents mentioned the desirability of including thermal sights.

The following recommendations were not mentioned frequently, but they appeared sufficiently imaginative, promising, and/or significant to mention here.

As I understand it, some rivers are everywhere fordable and the others are nowhere fordable. A suggestion was made that some fords be provided for the rivers that are now not fordable.

Some of the Scouts suggested that it ought to be possible to tow Bradleys -- as they can be in the field. Would it be reasonable to apply this recommendation also to the M1s?

One suggestion for the AARs was that video take-home packages ought to be provided to units participating in SIMNET. Take-home packages are provided by National Training Center (NTC).

Recommendations were made for both directional and proportional sound effects. Battlefield sounds might be louder proportional to their proximity and louder in the direction of their origin.

It was recommended that different air vehicles should look different -- or at least friendly air vehicles should be distinguishable from enemy air vehicles.

The Scouts recommended that 12 missiles be provided on TOW vehicles rather than 5.

One recommendation that was notable for its infrequency was that the terrain be extended beyond the current 3000M. Only 2 respondents made this recommendation.

OTHER MATTERS

Three other matters that I noticed in the questionnaire responses concern leadership, switches, and field substitutability.

Different forms of leadership may be trained with different effectiveness in SIMNET. The Perceptions Questionnaire asked respondents to report their impressions of using SIMNET to teach leadership skills. The responses brought out most of the different views of leadership. The main contrast here appeared to be between leadership in the sense of planning, operation concepts, and command and control on one hand and leadership in the sense of troop leading on the other. The respondents reported that SIMNET contributed to the former, but not to the latter.

Some respondents complained that there were too many breakdowns in SIMNET for accomplishing training missions. One might envision switches that could be turned on and off in accord with different training objectives. Vehicle breakdown, communications reliability, and jamming might be controlled by system-related switches. Map accuracy, air

support, and intelligence might be controlled by engagement-related switches. We often use the latter in training. Perhaps we should provide the former in SIMNET. Or one might simply insist that SIMNET always reflect environmental reality.

Many of the commanders appeared concerned that SIMNET would be used to replace field time. A vote for SIMNET might be a vote against field time. One commander simply wrote, "Don't take money from field time to support SIMNET." These considerations are similar to those that arose in the aircrew training communities when considerations of flight hours and simulator hours came up. This is an issue that may need to be met head on.

QUESTIONNAIRE REVISION

Now that we are gaining some familiarity with these questionnaires and the responses they attract, it may be time to develop them further with more specificity. We ask about the Seven Operating Systems now. Next we should probably ask about components of these systems.

We have asked what should be trained in SIMNET. We also need to ask what shouldn't, in the respondent's opinion, be trained in SIMNET.

Table 1. Descriptions of Commander, Crew, and Scout Respondents

	Cmdr	Crew	Scouts
Number	19	60	9
Average Years of Active Military Service	7.1	4.0	4.3
Average years in Combat Arms Units	6.1	3.4	3.8
Average Hours in SIMNET	48.8	54.8	44.6
Current Duty Position			
Loader		5	
Driver	2	22	4
Gunner		23	5
TC	7	4	
1stSgt	1	1	
SupSgt		1	
PltSgt	2	3	
PltLdr	2		
TrpXO	3		
CoCmdr	2		
BNS3		1	
SIMNET Duty Position			
Loader			3
Driver		23	4
Gunner		26	5
TC	7	5	
1stSgt	1		
SupSgt		1	
PltSgt	4		
PltLdr	2		
TrpXO	3		
CoCmdr	2		
RTO			
BNS3		1	

Table 2. Commanders' Ratings

(35 Items, Average Rating = 3.63)

Rank	Rating	Item
1	4.26	How motivated were you to do well in SIMNET exercises?
2	4.17	Did you conduct training in SIMNET that you could not conduct in the classroom?
3	4.16	Overall, how well does SIMNET exercise command and control skills?
4	4.05	Overall, how well does SIMNET exercise combined arms skills?
5	3.89	How well does SIMNET exercise skills needed to work with companies?
6	3.89	Please rate SIMNET as a trainer for units such as platoons, companies, and battalions.
7	3.89	How well does SIMNET exercise maneuvering skills?
8	3.88	How well does SIMNET exercise skills needed to work with battalions?
9	3.84	How well did the sound and vibration effects in your SIMNET vehicle opere .c?
10	3.84	How well did SIMNET exercise your decision making skills?
11	3.84	Please rate SIMNET overall as a trainer.
12	3.79	How well did SIMNET exercise your tacti. skills?
13	3.79	How well does SIMNET exercise fire support skills?
14	3.74	How well did the controls (knobs, dials, switches, etc.) in your SIMNET vehicle operate?
15	3.74	How would you rate your experience in SIMNET?
16	3.68	How well does SIMNET exercise skills needed to work with platoons?
17	3.68	Please rate SIMNET as a trainer for your duty position.

Table 2 (Continued).   Commanders' Ratings

(35 Items, Average Rating = 3.63)

18	3.68	How many of your training objectives did you meet using SIMNET?
19	3.63	How well did SIMNET exercise your land navigation skills?
20	3.63	How much of what you learned in SIMNET can be applied in the field?
21	3.63	How well did the visual displays in your SIMNET vehicle operate?
22	3.61	How much of what you learned in SIMNET can be applied to field situations that are different from the ones you practiced in SIMNET?
23	3.61	How well does SIMNET exercise intelligence skills?
24	3.58	How realistic did the SIMNET exercises seem?
25	3.53	How well did SIMNET exercise your target acquisition skills?
26	3.53	Overall, how well does SIMNET simulate battlefield events?
27	3.47	How well did SIMNET exercise your communication skills?
28	3.42	How many of your actions and decisions in SIMNET were the same as they would be in the field?
29	3.32	How well did SIMNET exercise your skills in using terrain?
30	3.32	Did you conduct training in SIMNET that you could not conduct in the field?
31	3.21	How well does SIMNET exercise mobility/countermobility skills?
32	3.05	How well does SIMNET exercise administrative and logistical skills?
33	3.05	How well did SIMNET simulate the amount of time needed for resupply, refueling, and repairs?
34	2.94	How well does SIMNET exercise air defense skills?
35	2.84	How well did the communications in your SIMNET vehicle operate?

Table 3. Commanders Ratings -- Training Types

(18 Items, Average Rating = 5.79)

Rank	Rating	Item
1	6.84	Battalion-Level Field Training Exercises
2	6.58	Company-Level Field Training Exercises
3	6.42	Combined Arms Force on Force Exercises
4	6.28	Pre-Command Training
5	6.16	Battalion-Level Fire Coordination Exercises
6	6.16	Armor Officer Advanced Training
7	6.11	Platoon-Level Field Training Exercises
8	6.00	Company-Level Fire Coordination Exercises
9	6.00	Combined Arms Live Fire Exercises
10	5.89	Armor Officer Basic Training
11	5.74	Initial Entry Gunner Training
12	5.53	Advanced NCO Training
13	5.47	Basic (A-C) Tactical Tables
14	5.42	Initial Entry Driver Training
15	5.37	Advanced (G-I) Tactical Tables
16	5.32	Intermediate (D-F) Tactical Tables
17	5.32	Basic NCO Training
18	3.68	Initial Entry Loader Training

Table 4. Major Differences in Commanders' and Scouts' Rankings

(19 Commanders and 9 Scouts)

Cmdr Ranking	Scout Ranking	Item
4	29	Overall, how well does SIMNET exercise combined arms skills?
13	33	How well does SIMNET exercise fire support skills?
27	9	How well did SIMNET exercise your communication skills?
31	15	How well does SIMNET exercise mobility/countermobility skills?
26	11	Overall, how well does SIMNET simulate battlefield events?
30	16	Did you conduct training in SIMNET that you could not conduct in the field?
20	32	How much of what you learned in SIMNET can be applied in the field?
15	4	How would you rate your experience in SIMNET?
7	18	How well does SIMNET exercise maneuvering skills?

Table 5. Commanders' Questionnaire -- Open-Ended Items

Did you conduct training in SIMNET that you could not conduct in the classroom?

Movement and Maneuver: 9	Bradley experience: 3
Command and Control: 3	Driving Skills: 2
Firing skills: 1	

Did you conduct training in SIMNET that you could not conduct in the field?

Evasion of artillery: 4	Movement in a free area: 1
Tactical air support: 1	Maneuver with vision blocks out: 1
Map reading: 1	OpFor that looks different: 1

What single thing did SIMNET do best to help you do your job?

Command and Control: 8	Movement and maneuver: 6
Bradley experience: 4	Target acquisition: 2
Artillery support: 2	Driving skills: 1
Communications: 1	Spot reports: 1
Crew coordination: 1	

What single factor in SIMNET should be improved to help you do your job?

More/better terrain features: 7	Vehicle id numbers: 4
Night ops: 4	1st Sgt vehicle: 4
Communications: 3	Smoke: 3
Less accurate OpFor Arty: 3	Thermal sights: 3
Better defense: 3	M2 driver's visibility: 2
12 missiles on TOW: 2	CVCs: 2
FIST vehicle: 2	Add TOW sight: 1
System reliability: 1	Weather: 1
Better trajectories: 1	Bradleys should be able to tow: 1
Fords for water: 1	Directional sound effects: 1
Vision beyond 3000M: 1	Open hatch ops: 1
Enemy/friendly air differences: 1	Better TC sights: 1
Medic vehicle: 1	Mortar vehicle: 1
Role for Co maint. chief: 1	Unity window for gunner: 1
Fewer (simulated) breakdowns: 1	

25

Table 6. Descriptions of Commanders, Officers, and Enlisted Personnel

	Cmdr	Off	NCO
Number	19	7	12
Average Years of Active Military Service	7.1	4.3	8.7
Average years in Combat Arms Units	6.1	3.9	7.4
Average Hours in SIMNET	48.8	35.3	56.7

Table 7. Officer and Enlisted Commanders' Rankings of Items.

(7 Officers and 12 Enlisted)

Cmdr Ranking	Officer Ranking	NCO Ranking	Item
1	1	4	How motivated were you to do well in SIMNET exercises?
2	2	5	Did you conduct training in SIMNET that you could not conduct in the classroom?
3	4	1	Overall, how well does SIMNET exercise command and control skills?
4	14	2	Overall, how well does SIMNET exercise combined arms skills?
5	12	11	How well does SIMNET exercise skills needed to work with companies?
6	13	6	Please rate SIMNET as a trainer for units such as platoons, companies, and battalions.
7	15	10	How well does SIMNET exercise maneuvering skills?
8	7	14	How well does SIMNET exercise skills needed to work with battalions?
9	23	3	How well did the sound and vibration effects in your SIMNET vehicle operate?
10	11	12	How well did SIMNET exercise your decision making skills?
11	5	16	Please rate SIMNET overall as a trainer.
12	19	7	How well did SIMNET exercise your tactical skills?
13	20	9	How well does SIMNET exercise fire support skills?
14	9	19	How well did the controls (knobs, dials, switches, etc.) in your SIMNET vehicle operate?

15	6	23	How would you rate your experience in SIMNET?
16	29	8	How well does SIMNET exercise skills needed to work with platoons?
17	3	29	Please rate SIMNET as a trainer for your duty position.
18	16	24	How many of your training objectives did you meet using SIMNET?
19	27	13	How well did SIMNET exercise your land navigation skills?
20	17	25	How much of what you learned in SIMNET can be applied in the field?
21	8	27	How well did the visual displays in your SIMNET vehicle operate?
22	22	17	How much of what you learned in SIMNET can be applied to field situations that are different from the ones you practiced in SIMNET?
23	21	20	How well does SIMNET exercise intelligence skills?
24	26	22	How realistic did the SIMNET exercises seem?
25	28	18	How well did SIMNET exercise your target acquisition skills?
26	25	26	Overall, how well does SIMNET simulate battlefield events?
27	10	34	How well did SIMNET exercise your communication skills?
28	18	30	How many of your actions and decisions in SIMNET were the same as they would be in the field?
29	33	15	How well did SIMNET exercise your skills in using terrain?
30	24	33	Did you conduct training in SIMNET that you could not conduct in the field?
31	34	21	How well does SIMNET exercise mobility/countermobility skills?

32	30	32	How well does SIMNET exercise administrative and logistical skills?
33	32	31	How well did SIMNET simulate the amount of time needed for resupply, refueling, and repairs?
34	35	28	How well does SIMNET exercise air defense skills?
35	31	35	How well did the communications in your SIMNET vehicle operate?

Table 8. Officer and Enlisted Commanders' Rankings of Training Types.

(7 Officers and 12 Enlisted)

Cmdr Ranking	Officer Ranking	NCO Ranking	Item
1	1	3	Battalion-Level Field Training Exercises
2	4	2	Company-Level Field Training Exercises
3	5	5	Combined Arms Force on Force Exercises
4	2	15	Pre-Command Training
5	6	9	Battalion-Level Fire Coordination Exercises
6	3	14	Armor Officer Advanced Training
7	9	6	Platoon-Level Field Training Exercises
8	6	8	Company-Level Fire Coordination Exercises
9	10	7	Combined Arms Live Fire Exercises
10	7	13	Armor Officer Basic Training
11	15	4	Initial Entry Gunner Training
12	11	16	Advanced NCO Training
13	12	10	Basic (A-C) Tactical Tables
14	17	1	Initial Entry Driver Training
15	14	11	Advanced (G-I) Tactical Tables
16	13	17	Intermediate (D-F) Tactical Tables
17	16	12	Basic NCO Training
18	18	18	Initial Entry Loader Training

Table 9. Crewmembers' Ratings

(28 Items, Average Rating = 3.28)

Rank	Rating	Item
1	3.83	How well did the sound and vibration effects in your SIMNET vehicle operate?
2	3.59	Please rate SIMNET overall as a trainer.
3	3.59	How well did SIMNET exercise skills you need to work with other members of your crew?
4	3.58	Please rate SIMNET as a trainer for units such as platoons, companies, and battalions.
5	3.54	How well did the controls (knobs, dials, switches, etc.) in your SIMNET vehicle operate?
6	3.53	How well does SIMNET exercise skills needed to work with companies?
7	3.53	How well does SIMNET exercise the technical skills needed to operate equipment in combat vehicles?
8	3.51	How motivated were you to do well in SIMNET exercises?
9	3.48	How well does SIMNET exercise skills needed to work with platoons?
10	3.48	How well did SIMNET exercise the technical skills needed to operate combat vehicles?
11	3.47	How well did SIMNET exercise your target acquisition skills?
12	3.44	How would you rate your experience in SIMNET?
13	3.42	How well did SIMNET exercise your land navigation skills?
14	3.37	How well did the visual displays in your SIMNET vehicle operate?
15	3.34	How well did SIMNET exercise your tactical skills?
16	3.30	How well did SIMNET exercise your decision making skills?
17	3.29	How well did SIMNET exercise your communication skills?
18	3.22	Please rate SIMNET as a trainer for your duty position.
19	3.22	Overall, how well does SIMNET simulate battlefield events?
20	3.21	How much of what you learned in SIMNET can be applied in the field?
21	3.19	How many of your actions and decisions in SIMNET were the same as they would be in the field?

Table 9 (Continued).   Crewmembers' Ratings

(28 Items, Average Rating = 3.23)

22	3.19	How realistic did the SIMNET exercises seem?
23	3.17	How well did SIMNET exercise your skills in using terrain?
24	3.12	How well does SIMNET exercise the technical skills needed to operate weapons?
25	2.97	How well did SIMNET simulate the amount of time needed for resupply, refueling, and repairs?
26	2.96	How well does SIMNET exercise administrative and logistical skills?
27	2.88	How much of what you learned in SIMNET can be applied to field situations that are different from the ones you practiced in SIMNET?
28	2.78	How well did the communications in your SIMNET vehicle operate?

Table 10. Major Differences between Drivers' and Gunners' Rankings

(23 Drivers and 22 Gunners)

Crew Ranking	Driver Ranking	Gunner Ranking	Item
12	3	16	How would you rate your experience in SIMNET?
13	19	6	How well did SIMNET exercise your land navigation skills?
23	24	11	How well did SIMNET exercise your skills in using terrain?
8	17	5	How motivated were you to do well in SIMNET exercises?
21	14	24	How many of your actions and decisions in SIMNET were the same as they would be ir the field?
6	12	2	How well does SIMNET exercise skills needed to work with companies?
7	13	3	How well does SIMNET exercise the technical skills needed to operate equipment in combat vehicles?

Table 11. Crewmembers' Questionnaire -- Open-Ended Items

What single thing did SIMNET do best to help you do your job?

Map reading/navigation: 8	Maneuver: 6
Command and control: 6	Target acquisition: 4
Crew coordination: 4	"Environmental" realism: 3
Communications: 3	M1 experience: 3
Closed hatch ops: 3	Avoid the field: 2
Knowledge of equipment: 1	

What single factor in SIMNET should be improved to help you do your job?

Vehicle id numbers: 12	More/better terrain features: 6
Improved communications: 6	More realistic: 4
Larger OpFor: 4	System reliability: 3
Weapons (Co-ax & 50 cal): 3	More OpFor vehicle features: 3
Upgrade gunner's station: 3	More knobs: 2
Less noise: 2	Logistics/maintenance: 2
Thermal sight: 2	CVCs: 2
Better graphics: 2	Vision blocks: 2
Mines: 1	More variety of targets: 1
Improve Loader's station: 1	MOPP situations: 1
Troop/truck targets: 1	Night ops: 1
Speed cues from terrain: 1	Battlefield haze: 1
Operational place for 1st Sgt: 1	Better fire control: 1
Less waiting for start-up: 1	Video terrain at 1:50,000: 1

Table 12. Perceptions Questionnaire Item 1

(32 Responses)

What is your impression of using SIMNET to teach collective maneuver techniques/skills?

Yes: 22   Adequate: 6   No: 4

Tight formations and drills: 8	Unrestricted movement: 6
Command and Control: 5	Needs depth and speed perception: 5
Wingman training: 3	Use of terrain: 3
Horizontal integration: 3	Land navigation: 3
Not for maneuver: 2	Reconnaissance: 1
Needs night ops: 1	Not land nav: 1
Target id: 1	Offense but not defense: 1
Needs smoke: 1	Co and Bn but not platoon: 1

Selected Quotes:

"The best garrison training available for teaching field skills"

"Outstanding command & control for commanders and platoon leaders"

"Outstanding tool to teach collective maneuver techniques"

Table 13.   Perceptions Questionnaire Item 2

(31 Responses)

What is your impression of using SIMNET to teach leadership skills?

Yes: 20   Adequate: 6   No: 5

    No troop leading leadership: 10   Planning and OpOrders: 7

    Only practiced in SIMNET: 2   Reports and vertical integration: 2

    Needs vehicle id numbers: 2   Only maneuver and fire: 2

    Use with field exercises: 1

Selected Quotes:

"Just about all basic leadership skills can be practiced"

"There are no leadership skills taught in SIMNET"

Table 14. Perceptions Questionnaire Item 3

(34 Responses)

What level of leadership do you feel would benefit the most from utilizing SIMNET?

Crew: 0   Platoon: 4   Company: 6   Battalion: 13   All: 8   All But Crew: 3

Why?

Horizontal integration: 7	Vertical integration: 6
Command and control: 6	Maneuvering: 6
Battle drills: 3	Tight feedback: 2
Inexpensive: 2	Call for fire: 2
SOPs: 2	Reconstitution: 1
LOGPAC ops: 1	Intelligence: 1

Selected Quotes:

"The bigger the picture, the more useful SIMNET is and the less likely that level of leadership gets to test itself and develop itself"

"Perfect trainer for battalion staff to conduct their paperwork drill"

"As the days went on my crew got better at fire commands and working as a team"

Table 15.   Perceptions Questionnaire Item 4

(34 Responses)

Do you feel that SIMNET can be used effectively as a command and control trainer?

Yes: 34   No: 0

Why?

Horizontal integration: 6	Vertical integration: 4
Commo a problem: 4	Unrestricted maneuver: 2
Movement control: 2	

Selected Quotes:

"The system gets to confusing with unmarked vehicles to try to work with a unit any larger than a company"

Table 16.   Perceptions Questionnaire Item 5

(33 Responses)

If you had access to a SIMNET system, would you use it to train?

Yes: 30   Maybe: 1   No: 2

Circle at what level you would train:

Crew: 8   Platoon: 25   Company: 10   Battalion: 11

List below what types of tasks would you train using SIMNET:

Movement to contact: 13	Actions on contact: 10
Maneuver: 9	Formations/drills: 9
Hasty defense: 6	Deliberate attack: 6
Fire commands: 6	Land nav/map reading: 6
Hasty attack: 5	Road marches: 4
Reaction to fire: 3	Command and control: 3
OpOrders: 3	Reconnaissance: 3
Assault: 2	Spot reports: 2
LOGPAK ops: 2	Offense rather than defense: 2
Consolidation/reconstitution: 2	Vehicle recognition: 2
No substitution for the field: 2	Screening: 2
Communications: 1	Troop leading: 1
Deliberate defense: 1	Personnel and vehicle status: 1
Poor crew/platoon trainer: 1	PCI checks: 1

Selected Quote:

"Preparation of orders/troop leading procedures culminating in actual execution and
    unlimited replay"

Table 17. Perceptions Questionnaire Item 6

(31 Responses)

What do you think is the most positive aspect of the SIMNET system? Why?

Command and control: 9	Cheaper: 6
Horizontal integration: 4	Availability: 4
Arty/see indirect fire: 3	Vertical integration: 3
Mission playback: 2	Collective maneuver: 2
Safety: 2	Closed hatch ops: 2
Communications: 1	All forms of mounted training: 1
Battlefield confusion: 1	Focus on fundamentals: 1
Graded increase of difficulty: 1	Closed hatch ops: 1
Target acquisition: 1	Land navigation: 1

Selected Quotes:

"Forces TOC, company and above commanders to talk up, down and laterally, and work together"

"It replicates the fog of war and demands specific, rehearsed procedures to achieve success"

Table 18. Perceptions Questionnaire Item 7

(32 Responses)

What do you think is the most negative aspect of the SIMNET system. Why?

Needs Obstacles/Engineering: 7	Needs night ops: 4
Depth/speed perception: 4	No hatch open ops: 3
Communications: 3	Needs smoke: 2
Needs 1st Sgt vehicle: 2	Not real: 2
Headphones: 2	Dismounted ops: 2
Needs FIST vehicle: 2	A3 tankers on M1s: 2
Needs vehicle id numbers: 2	Stress/burn out: 2
Can't replace field trng: 2	Sound effects too loud: 1
Too much like an arcade: 1	Needs NTC terrain: 1
Limited (3000M) vision: 1	No aircraft id: 1
Low resolution CGI: 1	Only TC trained: 1
Sight picture too clear: 1	Teaches bad habits: 1
Needs weather effects: 1	Needs NBC play: 1
Maintenance ops: 1	System unreliability: 1

Selected Quote:

"Communications was the one major disappointment of SIMNET"

Table 19. Perceptions Questionnaire Item 8

(33 Responses)

Do you feel that SIMNET can be used for training prior to a field exercise/test?

Yes: 31   No: 2

If so, circle one or more of the following to indicate which of the following exercises you feel you could train for using SIMNET.

a. Plt FTX:13   b. Plt CALFEX: 4   c. Plt ARTEP: 9   d. Co FTX: 13

e. Co CALFEX: 5   f. Co ARTEP: 9   g. Bn FTX: 12   h. Bn ARTEP: 10

i. NTC: 14   j. Other: 1   All: 4

What combination of field and SIMNET training would you use prior to each?
    50% Field/50% SIMNET: 2   80% Field/20% SIMNET: 2
    75% Field/25% SIMNET: 1   100% Field/0% SIMNET: 1

    Need for field training: 8   Not ARTEP: 2
    All C3I: 2   Movement to contact: 1
    Room to maneuver: 1   Platoon fire plans: 1
    Hasty defense: 1   Counter attacks: 1

Selected Quotes:

"It should be used after field training to sustain and refine"

"No replacement for the real thing"

Table 20. Perceptions Questionnaire Item 9

(31 Responses)

What features would you consider useful for a device to be used for after action reviews? (Please list ALL the characteristics of the display and software that you feel would be necessary to meet your needs in order of importance.)

Wide screen video replay: 8	Complete video take home package: 6
Include vehicle id numbers: 2	Hardcopy of vehicle kills: 2
Tank FOV: 2	Bird's eye view: 2
Hear commo during AAR: 1	Gun tube orientation: 1
Intervisibility: 1	

Table 21. Perceptions Questionnaire Item 10

(33 Responses)

Do you think your training on SIMNET was helpful?

Yes: 31   No: 2

Please explain.

Command and control: 10	Land nav/map reading: 7
Horizontal integration: 6	Maneuver: 5
Fire control: 5	Battle drills/formations: 4
Spot reports: 2	Target Acquisition: 1
Reaction to artillery: 1	No substitute for field: 1
Not realistic: 1	OpOrders: 1
Overwatch: 1	Support elements: 1
Communications: 1	Understanding Bn mission: 1

Selected Quotes:

"I got to work as part of a task force operation for the first time"

"I've done enough explaining already, please give me a break"

Table 22. Perceptions Questionnaire Item 11

(34 Responses)

What are the major changes/modifications you would recommend for SIMNET?

Vehicle id numbers: 10	Obstacles: 9
Smoke: 8	Improve communications: 7
Improve visibility for TC: 5	Effect of artillery on terrain: 4
More weapons: 4	1st Sgt vehicle: 4
More realistic: 4	Night ops: 3
Terrain cues for speed: 3	Desert terrain: 3
FIST vehicle: 2	CVCs: 2
Land mines: 2	Improve firing system: 2
Controllable CSS vehicles: 2	Arty noise prop. to proximity: 1
More detailed log play: 1	Azimuth indicators on M3s: 1
Dismounted ops: 1	Eliminate loader and gunner: 1
More built up areas: 1	Hatch open ops: 1
Spring controlled TC seat: 1	Big screen AAR: 1
Weather effects: 1	TOW acquisition reticle: 1
More/better terrain cues: 1	Fording points for rivers: 1
NBC play: 1	Better id of vehicle problems: 1
Hull/turret down ops: 1	Ammo reloading closer to UCOFT: 1
Control over air assets: 1	More system reliability: 1
Better ventilation: 1	Longer cords on headsets: 1
Improve target sights: 1	

Table 23. Perceptions Questionnaire Item 12

(34 Responses)

What do you feel is the longest duration that a continuous exercise could be conducted using SIMNET?

a. 2 hrs: 3   b. 4 hrs: 7   c. 6 hrs: 4   d. 8 hrs: 9   e. 12 hrs: 6

f. 16 hrs: 0   g. 24 hrs: 1   h. 48 hrs: 1   i. 72 hrs: 1   j. Other hrs: 2

Why?

Noise and stress: 15   Crew boredom: 1

Assault, reconstitution, hasty defense = 8 hrs

12 hrs because no night play

72 hrs -- about the same as ARTEP

Selected Quotes:

Although it's a good trainer, it's still a cartoon -- disorienting and tedious"

"Headaches after 4 hours"

"It's easy to reach SIMNET burnout"

"Time should be a realistic as possible"

"Need to AAR" -- 4 hrs

"How long can you stare at a computer screen?"

"Two missions maximum per day" -- 4 hrs apiece with their AARs

"Most training objectives can be accomplished in 4-8 hrs -- - Time must be allowed for detailed AAR"

Table 24.   Perceptions Questionnaire Item 13

Please feel free to make any other comments concerning SIMNET that you feel have not [been?] addressed yet.

Reduce noise level (as CVC does): 3	Needs dismounted operations: 1
Too many computer problems: 1	Needs obstacles: 1
Overrated: 1	Too comfortable: 1
Needs effects of artillery: 1	Missing support elements: 1
Combine with UCOFT: 1	Improved commo reliability: 1

Selected Quotes:

"I did not like SIMNET at first, but after getting used to maneuvering buttoned up all the time, and getting used to the maps better, the exercises were better conducted and the command and control was greatly improved"

"Don't take money from field time to support SIMNET"

Table 25. Other Comments

"I learned more during my 2 weeks of SIMNET than I had at all of Ft. Bliss '87'"

"Our Bradley and others were killed by friendly aircraft (A-10) while they [the A-10s] were joyriding during the middle of a battle" -- (more control/discipline over battlefield events)

"Very nice, enjoyed the trg. Coffee was excellent. Donuts would be nice in the future."

"Very overrated"

Table 26. Summary of Suggested Improvements

Vehicle identification numbers

More/better terrain features

Engineering/obstacles/mines

Communications reliability

Improved headsets

Night operations

Smoke and Weather

1st Sgt Vehicle (and others)

TC vision blocks

More realistic driving characteristics

Large screen AARs

Artillery should affect terrain

Less accurate OpFor artillery

Thermal imaging sight

Fording

Towing

Take home video packages

Directional/proportional sound

12 missile TOWs

Air vehicle identification

ATTACHMENT 1

SIMNET QUESTIONNAIRE

SIMNET QUESTIONNAIRE

We'd like to know what you think about SIMNET. Please take a few minutes to fill out this questionnaire. Your responses will tell us what we should do to improve SIMNET and when to do it.

What is today's date?   _____

What is your current duty position?   _____

How many years of active duty
military service have you had?   _____

How many of those years have
you spent in combat arms units?   _____

What is your branch (Armor, Infantry, etc.)? _____

About how many hours have you
spent in SIMNET?   _____

What was your primary position
in the simulator (tank commander,
pilot, gunner, driver, loader, etc.)?   _____

Did you have other responsibilities
in your SIMNET unit (company
commander, squad leader, etc.)?
Please list them here.   _____

Most of this questionnaire contains questions like the following example. Five responses are given under each question. Please circle the number of the response that best represents what you think.

Is Ft. Knox is the most beautiful post in the Army?

5	4	3	2	1
Definitely Yes	Probably Yes	Possibly	Probably Not	Definitely Not

73

1. How would you rate your experience in SIMNET?

5	4	3	2	1
Very Good	Good	Satisfactory	Poor	Very Poor

2. Please rate SIMNET overall as a trainer.

5	4	3	2	1
Very Good	Good	Satisfactory	Poor	Very Poor

3. Please rate SIMNET as a trainer for units such as platoons, companies, and battalions.

5	4	3	2	1
Very Good	Good	Satisfactory	Poor	Very Poor

4. Please rate SIMNET as a trainer for your current duty position.

5	4	3	2	1
Very Good	Good	Satisfactory	Poor	Very Poor

5. How much of what you learned in SIMNET can be applied in the field?

5	4	3	2	1
Almost All	Most	Some	A little	Almost None

6. How much of what you learned in SIMNET can be applied to field situations that are different from the ones you practiced in SIMNET?

5	4	3	2	1
Almost All	Most	Some	A little	Almost None

7. How many of your actions and decisions in SIMNET were the same as they would be in the field?

5	4	3	2	1
Almost All	Most	Some	A few	Almost None

8. How well did SIMNET simulate the amount of time needed for resupply, refueling, and repairs?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

9. How well did the communications in your SIMNET vehicle operate?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

10. How well did the visual displays in your SIMNET vehicle operate?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

11. How well did the controls (knobs, dials, switches, etc.) in your SIMNET vehicle operate?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

12. How well did the sound and vibration effects in your SIMNET vehicle operate?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

13. Overall, how well did SIMNET exercise your tactical skills?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

14. How well did SIMNET exercise your communication skills?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

15. How well did SIMNET exercise your decision-making skills?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

16. How well did SIMNET exercise your administrative and logistical skills?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

17. How well did SIMNET exercise your land navigation skills?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

18. How well did SIMNET exercise your skills in using terrain?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

19. How well did SIMNET exercise your target acquisition skills?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

20. How well did SIMNET exercise skills you need to work with other members of your crew?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

21. How well did SIMNET exercise skills you need to work with your platoon?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

22. How well did SIMNET exercise skills you need to work with your company?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

23. How well does SIMNET exercise the technical skills needed to operate combat vehicles?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

24. How well does SIMNET exercise the technical skills needed to operate equipment in combat vehicles?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

25. How well does SIMNET exercise the technical skills needed to operate weapons?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

26. Overall, how well does SIMNET simulate battlefield events?

    5   4   3   2   1

    Very   Well   Satisfactorily Poorly   Very
    Well   Poorly

27. How motivated were you to do well in SIMNET exercises?

    5   4   3   2   1

    Very   Motivated   Neutral   Unmotivated   Very
  Motivated   Unmotivated

28. How realistic did the SIMNET exercises seem?

    5   4   3   2   1

    Very   Realistic   Somewhat Unrealistic   Very
  Realistic   Realistic   Unrealistic

29. What single thing did SIMNET do best to help you do your job?

_____

_____

30. What single factor in SIMNET should be improved to help you do your job?

_____

_____

31. Did you have fun in SIMNET?

   2   1

   Yes   No

32. Do you want to do it all again?

   2   1

   Yes   No

33. Are there other comments you would like to make about SIMNET? Please add them here:

ATTACHMENT 2

SIMNET COMMANDER'S QUESTIONNAIRE

SIMNET COMMANDER'S QUESTIONNAIRE

We'd like to know what you think about SIMNET. Please take a few minutes to fill out this questionnaire. Your responses will tell us what we should do to improve SIMNET and when to do it.

What is today's date?   _____

What is your current duty position?   _____

How many years of active duty
military service have you had?   _____

How many of those years have
you spent in combat arms units?   _____

What is your branch (Armor, Infantry, etc.)? _____

About how many hours have you
spent in SIMNET?   _____

What was your primary responsibility
in your SIMNET unit (company
commander, platoon leader,
battalion executive officer, etc.)?   _____

Most of this questionnaire contains questions like the following example. Five responses are given under each question. Please circle the number of the response that best represents what you think.

Is Ft. Knox is the most beautiful post in the Army?

5	4	3	2	1
Definitely Yes	Probably Yes	Possibly	Probably Not	Definitely Not

1. How would you rate your experience in SIMNET?

5	4	3	2	1
Very Good	Good	Satisfactory	Poor	Very Poor

2. Please rate SIMNET overall as a trainer.

5	4	3	2	1
Very Good	Good	Satisfactory	Poor	Very Poor

3. Please rate SIMNET as a trainer for units such as platoons, companies, and battalions.

5	4	3	2	1
Very Good	Good	Satisfactory	Poor	Very Poor

4. Please rate SIMNET as a trainer for your duty position.

5	4	3	2	1
Very Good	Good	Satisfactory	Poor	Very Poor

5. How much of what you learned in SIMNET can be applied in the field?

5	4	3	2	1
Almost All	Most	Some	A little	Almost None

6. How much of what you learned in SIMNET can be applied to field situations that are different from the ones you practiced in SIMNET?

5	4	3	2	1
Almost All	Most	Some	A little	Almost None

7. How many of your actions and decisions in SIMNET were the same as they would be in the field?

5	4	3	2	1
Almost All	Most	Some	A few	Almost None

8. How well did SIMNET simulate the amount of time needed for resupply, refueling, and repairs?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

If you did not have an opportunity to exercise in a SIMNET vehicle, please skip items 9 - 12.

9. How well did the communications in your SIMNET vehicle operate?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

10. How well did the visual displays in your SIMNET vehicle operate?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

11. How well did the controls (knobs, dials, switches, etc.) in your SIMNET vehicle operate?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

12. How well did the sound and vibration effects in your SIMNET vehicle operate?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

13. How well did SIMNET exercise your tactical skills?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

14. How well did SIMNET exercise your communication skills?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

15. How well did SIMNET exercise your decision-making skills?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

16. How well did SIMNET exercise your land navigation skills?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

17. How well did SIMNET exercise your skills in using terrain?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

18. How well did SIMNET exercise your target acquisition skills?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

19. How well does SIMNET exercise skills needed to work with platoons?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

20. How well does SIMNET exercise skills needed to work with companies?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

21. How well does SIMNET exercise skills needed to work with battalions?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

22. Overall, how well does SIMNET exercise command and control skills?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

23. Overall, how well does SIMNET exercise combined arms skills?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

24. How well does SIMNET exercise maneuvering skills?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

25. How well does SIMNET exercise fire support skills?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

26. How well does SIMNET exercise intelligence skills?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

27. How well does SIMNET exercise air defense skills?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

28. How well does SIMNET exercise mobility/countermobility skills?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

29. How well does SIMNET exercise administrative and logistical skills?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

30. How many of your training objectives did you meet using SIMNET?

5	4	3	2	1
Almost All	Most	Some	A few	Almost None

31. Did you conduct training in SIMNET that you could not conduct in the classroom?

5	4	3	2	1
Definitely Yes	Probably Yes	Possibly	Probably Not	Definitely Not

If yes, what type of training seemed most important?

32. Did you conduct training in SIMNET that you could not conduct in the field?

5	4	3	2	1
Definitely Yes	Probably Yes	Possibly	Probably Not	Definitely Not

If yes, what type of training seemed most important?

33. Please indicate with a number from 1 (Very Poorly) to 10 (Very Well) how well each of the following types of training could be conducted using SIMNET.

1 (Very Poorly) -- 10 (Very Well)

a. Initial Entry Driver Training.   _____

b. Initial Entry Gunner Training.   _____

c. Initial Entry Loader Training.   _____

d. Basic (A-C) Tactical Tables.   _____

e. Intermediate (D-F) Tactical Tables.   _____

f. Advanced (G-I) Tactical Tables.   _____

g. Platoon-Level Field Training Exercises.   _____

h. Company-Level Field Training Exercises.   _____

i. Battalion-Level Field Training Exercises.   _____

j. Company-Level Fire Coordination Exercises.   _____

k. Battalion-Level Fire Coordination Exercises. _____

l. Combined Arms Live Fire Exercises.   _____

m. Combined Arms Force on Force Exercises.   _____

n. Basic NCO Training.   _____

o. Advanced NCO Training.   _____

p. Armor Officer Basic Training.   _____

q. Armor Officer Advanced Training.   _____

r. Pre-Command Training.   _____

34. Overall, how well does SIMNET simulate battlefield events?

5	4	3	2	1
Very Well	Well	Satisfactorily	Poorly	Very Poorly

35. How motivated were you to do well in SIMNET exercises?

5	4	3	2	1
Very Motivated	Motivated	Neutral	Unmotivated	Very Unmotivated

36. How realistic did the SIMNET exercises seem?

5	4	3	2	1
Very Realistic	Realistic	Somewhat Realistic	Unrealistic	Very Unrealistic

37. What single thing did SIMNET do best to help you do your job?

_____

_____

38. What single factor in SIMNET should be improved to help you do your job?

_____

_____

39. Did you enjoy SIMNET?

   2   1

   Yes   No

40. Do you want to do it all again?

   2   1

   Yes   No

41. Are there other comments you would like to make about SIMNET? Please add them here:

ATTACHMENT 3

PERCEPTIONS QUESTIONNAIRE

PERCEPTIONS OF SIMNET TRAINING

BN CDR, BN XO, CO CDR, CO XO, TC'S

Please write your responses to the following questions in the blank lines provided. If you need more space, please continue your response on the back of the questionnaire.

1. What is your impression of using SIMNET to teach collective maneuver techniques/skills?

_____

_____

_____

_____

_____

_____

_____

2. What is your impression of using SIMNET to teach leadership skills?

_____

_____

_____

_____

_____

_____

_____

_____

3.   What level of leadership do you feel would benefit the most from utilizing SIMNET?

a) Crew   b) Platoon   c) Company   d) Battalion

Why?_____

_____

_____

_____

_____

_____

_____

4.   Do you feel that SIMNET can be used effectively as a command and control trainer?   Yes   No

At what level? a) Crew   b) Platoon   c) Company   d) Battalion

Why?

_____

_____

_____

_____

_____

_____

_____

5.   If you had access to a SIMNET system, would you use it to
train?   Yes No

Circle at what level you would train:

a) Crew   b) Platoon   c) Company   d) Battalion

List below what types of task would you train using SIMNET:

_____

_____

_____

_____

_____

_____

_____

6.   What do you think is the most positive aspect of the SIMNET
system?   Why?

_____

_____

_____

_____

_____

_____

_____

7.   What do you think is the most negative aspect of the SIMNET
system?   Why?

_____

_____

_____

_____

_____

_____

_____

8. Do you feel that SIMNET can be used for training prior to a field exercise/test?   Yes   No

If so, circle one or more of the following to indicate which of the following exercises you feel you could training for using SIMNET.

    a)   Plt FTX   b)   Plt CALFEX   c)   Plt ARTEP
    d)   Co FTX   e)   Co CALFEX   f)   Co ARTEP
    g)   Bn FTX   h)   BN ARTEP   i)   NTC
    j)   Other _____

What combination of field and SIMNET training would you use prior to each?

_____

_____

_____

_____

_____

_____

_____

9. What features would you consider useful for a device to be used for after action reviews?   (Please list ALL the characteristics of the display and software that you feel would be necessary to meet your needs in order of importance.)

_____

_____

_____

_____

_____

_____

_____

10. Do you think your training of SIMNET was helpful?   YES   NO
Please explain.

_____

_____

_____

_____

_____

_____

_____

11. What are the major changes/modifications you would recommend
for SIMNET?

_____

_____

_____

_____

_____

_____

_____

_____

12. What do you feel is the longest duration that a continuous
exercise could be conducted using SIMNET?

        a) 2 hrs   b) 4 hrs   c) 6 hrs   d) 8 hrs
        e) 12 hrs   f) 16 hrs   g) 24 hrs   h) 48 hrs
        i) 72 hrs   j) Other ____   hrs

Why?_____

_____

_____

_____

_____

_____

_____

13. Please feel free to make any other comments concerning SIMNET
that you feel have not been addressed yet.

_____

_____

ATTACHMENT 4

ITEM 41 EXTENDED COMMENTS

ITEM 41 EXTENDED COMMENTS

Are there other comments you would like to make about SIMNET?
Please add them here:

1.   During company level training on SIMNET, the following lessons were learned.

2.   The best use of SIMNET is to exercise Company and platoon drills.   Command   and   control,   the   realistic   problems   of communication and changes in situations within the troop during the heat of the battle were all beneficial points of SIMNET.   Other good points are as follows;

     a.   Realistic training in giving spot reports and calls for fire.

     b.   Insures   Tank   commanders   understand   what   platoon drills look like from his cupola and the importance of drills and formations.

     c.   OPFOR can be positioned so to replicate true Soviet doctrine.   This OPFOR can be used in two ways; either to kill friendlys or not.   This gives one the benefit of keeping all your tanks in the fight so that all tanks get to remain in the game for the full exercise and not lose out on the training because they died at the LD.

3.   Drawbacks to SIMNET are as follows:

     a.   No night capability exists yet.

     b.   FIST, Mortars, 1SG's and Medics do not have vehicles   The FIST can control the mortar platoon but the mortar platoon leader does not see the battlefield from a vehicle.

     c.   Logistics played are Class III, V, and maintenance   The system is designed for Div 86 so the EMO has to control all maintenance assets.   Therefore, the company maintenance team chief has no role.

d.   Maintenance is almost too well programmed.   Of the eleven tanks I began the exercise with, three broke down on the road march.   This detracted from the training I wanted to accomplish.

e.   Tank Commanders are faced with very demanding land navigation.   The simulation is not realistic enough to use a military map yet and this makes navigation extremely hard.

f.   Loader's and gunner's training is unrealistic.   The gunner's sights have poor graphics and there isn't any unity window for the gunner to maintain a concept of the operation.   In real life, loading is a labor intensive task.   On SIMNET it is a matter of pushing buttons.

4.   SIMNET transforms a labor intensive, dirty, cold and wet job into a sanitary, warm training experience.   While we should not train to be miserable we must train to deal with what we shall encounter. At first it seems great, but it is pitifully unrealistic for FORSCOM units to use extensively.   I believe it has a lot of potential for use with AOAC and AODC students who don't heed to learn how miserable it is.